

**AWAPATENT**Handled by  
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23 February 1998Our ref.  
2950767Attention  
DG 2**REGISTERED LETTER****EUROPEAN PATENT OFFICE  
D-80298 MÜNCHEN****SENT BY TELECOPIER**

European Patent Application No 94915725.9-2303  
in the name of VÄLINGE ALUMINIUM AB

Dear Sirs,

This is in response to your Communication pursuant to Article 96(2), dated 21 October 1997.

Regarding section No. 1 in the Communication, the applicant's main request has been rejected as violating Article 123(2) by the deletion of an essential feature from claim 1. Although the applicant still is of the opinion that the paragraph in question, which was present in claim 1 as filed but which was deleted in claim 1 according to the main request, could be deleted from the claim without adding new matter, it is hereby requested that the application should be proceeded with based on claims 1-20 according to the secondary request submitted with the letter dated 26 June 1997. A fresh copy of these claims in triplicate is hereby enclosed.

However, it should be noted that what is stated in the second paragraph under section No. 1 in the Communication is not correct. In this paragraph the following is stated: *"In the original filed claim 1, it was stated that the panels, when joined together, have (emphasis added) a play so as to be able to occupy a relative position in the "second" direction."* This statement is not correct in the opinion of the applicant. Originally filed claim 1 states that *"the panels,*

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*when joined together, can (emphasis added) occupy a relative position in said second direction (D2) where a play ( $\Delta$ ) exists between ....".*

Thus, in the application as filed, it is expressly stated that the panels can be brought into a relative position in the D2 direction where a play exists. By this definition in claim 1 as filed, the inventive locking system was further distinguished from prior-art locking systems using spring clips, since such prior-art panels cannot be brought into a relative position where such a play exists. However, the above-identified statement in claim 1 as filed - the statement that the panels can be brought into a relative position where a play exists - is not equivalent to the statement in the Communication saying that a play is always present.

Furthermore, claim 1 according to the main request (i.e. claim 1 not including the definition of the play) has also been rejected in the Communication as defining an invention which is obvious in view of SE-A-450 141. This ground for rejection is based on the assumption that the invention according to claim 1 of the primary request is differentiated from the closest prior art simply in that the strip extends throughout substantially the entire length of the joint edge. As will be discussed in the following, this assumption is not correct according to the applicant, since the invention as defined in claim 1 differs also in other respects from the closest prior art. Therefore, the invention according to claim 1 presents an inventive step over said closest prior art, even without the presence of the definition of the play.

Under section No. 3 in the Communication, dealing with claim 1 of the secondary request, the applicant is requested to transfer a number of features from the characterising portion of claim 1 to the preamble thereof. Especially, the applicant is requested to make this transfer of nearly the entire first paragraph and also the two last paragraphs of the characterising portion of claim 1. A reconsideration of this request for transferring features to the preamble is respectfully requested for the following reasons:

The preamble of claim 1 is based on the closest prior art as disclosed in the above-mentioned document SE-A-450 141. Specifically, the last paragraph of the preamble of claim 1 includes the prior-art feature relating to a locking device arranged on the rear side forming a mechanical connection which locks the panels in said "second" direction. This paragraph in the preamble also states that this rear-side locking device comprises a locking groove. Thus, the preamble of

claim 1 already identifies both the prior-art first mechanical connection and the prior-art second mechanical connection, and also identifies the prior-art locking groove of the second mechanical connection.

However, the second mechanical connection of the invention is implemented in a way that differs substantially from the prior-art spring clips. In the inventive system, the rear-side locking device comprises a strip which is integrated with the panel. Furthermore, this strip extends throughout substantially the entire length of the joint edge. Thus, the term "strip" refers to an element having a longitudinal extension in the direction of the joint edges. The expression "integrated with" is defined in the application as an element which is either fixedly connected to the panel at the factory, or an element integrally formed with the panel. Such an integrated strip extending along the joint edges differs essentially from the separate spring clips described in SE-A-450 141, which are not integrated with the panels and are not extended as defined in claim 1. Therefore, these novel features of the locking device should be retained in the characterising portion. The locking element being part of the novel strip should therefore also be retained in the same paragraph. However, if found necessary during the further examination, the applicant is willing to discuss an alternative wording of claim 1 where some feature relating to a locking element is present in the preamble of claim 1. If this should be necessary, the Examiner is asked to contact the undersigned for a discussion on this point.

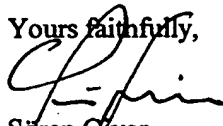
Turning now to the two last paragraphs of claim 1, the first one relates to the possibility of relative displacement of the panels in the direction of the joint edges. This feature is an essential feature of the invention and is not present in SE-A-450 141. By including this feature in the invention, it becomes possible to lock the short edges to each other. As explained in the application as filed, the presence of a plurality of spring clips in the prior-art system in SE-A-450 141 will not allow any mutual displacement of the panels in the direction of the joint edges, since the panels are held together very tight by these spring clips. If necessary, a sample of this prior-art system could be submitted in order to demonstrate this fact. Accordingly, this novel feature of the invention should be retained in the characterising portion of claim 1.

The possibility of taking up the panels after laying is the subject matter of the last paragraph of claim 1. The spring clips in the prior-art system in SE-A-450 141 do not allow any taking-

up of the panels after laying by turning a panel angularly from a strip. On the contrary, the spring clips effectively prevents any such attempt, since they would not leave the grooves and, therefore, since they cannot be extended in their longitudinal direction, would also prevent any rotational movement of one panel in relation to an adjacent panel. It should also be noted that the last paragraph of claim 1 refers to the "strip" which, as stated above, is a novel element in itself. Therefore, this paragraph of claim 1 should be retained in the characterising portion.

As indicated above, if there should remain any objections to the claims filed herewith, the Examiner is respectfully asked to contact the undersigned for a discussion on how such objections can be resolved.

Yours faithfully,



Sören Över  
Authorised Representative  
AWAPATENT AB

Encl. Claims in triplicate

1. A system for providing a joint along adjacent  
5 joint edges (3, 4) of two building panels (1, 2), especially floor panels, in which joint:

the adjacent joint edges (3, 4) together form a first mechanical connection locking the joint edges (3, 4) to each other in a first direction (D1) at right angles to the principal plane of the panels (1, 2), and  
10 a locking device (6, 8, 14) arranged on the rear side (18, 16) of the panels (1, 2) forms a second mechanical connection locking the panels (1, 2) to each other in a second direction (D2) parallel to the principal  
15 plane and at right angles to the joint edges (3, 4), said locking device (6, 8, 14) comprising a locking groove (14) which extends parallel to and spaced from the joint edge (4) of one (2) of said panels, termed groove panel, and which is open at the rear side (16) of the groove  
20 panel (2), characterised in

that the locking device (6, 8, 14) further comprises a strip (6) integrated with the other (1) of said panels, termed strip panel, said strip (6) extending throughout substantially the entire length of the joint edge (3) of  
25 the strip panel (1) and being provided with a locking element (8) projecting from the strip, such that when the panels are joined together, the strip (6) projects on the rear side of the groove panel (2) with its locking element (8) received in the locking groove (14) of the  
30 groove panel (2),

that the panels, when joined together, can occupy a relative position in said second direction (D2) where a play ( $\Delta$ ) exists between the locking groove (14) and a locking surface (10) on the locking element (8) that is  
35 facing the joint edges and is operative in said second mechanical connection,

that the first and the second mechanical connection both allow mutual displacement of the panels (1, 2) in the direction of the joint edges (3, 4), and

that the second mechanical connection is so conceived as to allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6).

2. A system as claimed in claim 1, characterised in that when the groove panel (2) is pressed against the strip panel (1) in said second direction (D2) and is turned angularly away from the strip (6), the maximum distance between the axis of rotation of the groove panel (2) and the locking surface of the locking groove (14) closest to the joint edges is such that the locking element (8) can leave the locking groove (14) without contacting the locking surface of the locking groove (14).

3. A system as claimed in claim 1 or 2, characterised in that the locking surface (10) of the locking element (8) is extended from the front side (22) of the strip (6) through a height in said first direction that is less than or equal to 2 mm.

4. A system as claimed in any one of the preceding claims, characterised in that the first mechanical connection is provided by the joint edge (4) of the groove panel (2) engaging, in said first direction, between the joint edge (3) of the strip panel (1) and the front side of the strip (6).

5. A system as claimed in any one of the preceding claims, characterised in that the strip (6) integrated with the strip panel (1) is made of a material different from that of the strip panel (1) and fixedly mounted on the strip panel (1) at the factory.

6. A system as claimed in claim 5, characterised in that the strip (6), at least for one of the two panels (1, 2), is received in a countersunk

groove (40; 42) in the rear side (18; 16) of this one panel (1; 2).

7. A system as claimed in claim 5 or 6, c h a r -  
a c t e r i s e d i n

5       that the strip (6) is mounted in an equalising groove (40) which is countersunk in the rear side (18) of the strip panel (1) and exhibits an exact, predetermined distance (E) from its bottom to the front side (21) of the strip panel (1),

10       that the part of the strip (6) projecting behind the groove panel (2) engages a corresponding equalising groove (42) which is countersunk in the rear side (16) of the groove panel (2) and which exhibits the same exact, predetermined distance (E) from its bottom to the front  
15 side (26) of the groove panel (2), and

      that the strip (6) has at least such a thickness that the rear side (44) of the strip is flush with the rear sides (18, 16) of the panels.

8. A system as claimed in claim 7, c h a r a c -  
20 t e r i s e d i n that the strip (6) has such a thickness that it is only partly received in the equalising grooves (40, 42).

9. A system as claimed in any one of claims 5-8, c h a r a c t e r i s e d i n that the strip (6) is fixed  
25 to the strip panel (1) by means of a mechanical connection.

10. A system as claimed in claim 9, c h a r a c -  
t e r i s e d i n that the mechanical connection between the strip (6) and the strip panel (1) comprises a grip-  
30 ping edge (52) defined by two recesses (24, 50) in the rear side (18) of the strip panel, and tongues, lips or the like (54, 56) which are bent or punched from the strip (6) and which press against opposite outer sides of the gripping edge (52).

35       11. A system as claimed in claim 9, c h a r a c -  
t e r i s e d i n that the mechanical connection between the strip (6) and the strip panel (1) comprises a recess

(58) in the rear side (18) of the strip panel, and tongues, lips or the like (60) which are bent or punched from the strip (6) and which press against opposing inner sides of the recess (58).

5        12. A system as claimed in any one of claims 5-11, characterised in that the strip (6) is fixed to the strip panel (1) by means of a binder.

10       13. A system as claimed in any one of claims 5-12, characterised in that the strip (6) is made of a flexible, preferably resilient material, such as sheet aluminium.

15       14. A system as claimed in any one of claims 1-4, characterised in that the strip (6) is integrally formed with the strip panel (1), i.e. made in one piece with the strip panel (1).

15       15. A system as claimed in any one of the preceding claims, characterised in that the locking element (8) consists of a locking edge extended continuously along the strip (6).

20       16. A system as claimed in any one of claims 1-14, characterised in that the locking element (8) consists of a plurality of spaced-apart locking elements distributed throughout the length of the strip (6).

25       17. A system as claimed in any one of the preceding claims, characterised in that the panels (1, 2) are rectangular and intended, at each of their four edges (3, 4, 3', 4'), to be joined to a similar panel by a first mechanical connection of the aforementioned type and a second mechanical connection of the aforementioned type, each panel having a first pair of opposite joint edges (3, 4), one of which is provided with a strip (6) of the aforementioned type and the other of which is provided with a locking groove (14) of the aforementioned type, and a second pair of opposite joint edges (3', 4'),  
30       one of which is provided with a strip (6') of the aforementioned type and the other of which is provided with a locking groove (14') of the aforementioned type.  
35



18. A system as claimed in any one of the preceding claims, characterised in that an underlay (46) of floor boards, foam, felt or the like is fixed to the rear sides (18, 16) of the panels.

5 19. A system as claimed in claim 18, characterised in that the underlay (46) is fixed so as to cover the strip (6) in said second direction at least up to the locking element (8), such that a joint between the underlays (46) of the two adjacent panels is offset in  
10 said second direction relative to the joint edges (3, 4).

20. A system as claimed in any one of the preceding claims, characterised in that a sealing means, such as a sealing compound, a rubber strip or the like, is provided on the front side (22) of the strip be-  
15 tween the locking element (8) and the joint edge (3) of the strip panel to seal against the groove panel (2).